CLAIMS

What is claimed is:

1. An isolated antibody which specifically binds to a polypeptide comprising an amino acid sequence selected from the group consisting of:

a) an amino acid sequence of SEQ ID NO:2,

b) a naturally-occurring amino acid sequence having at least 90% sequence identity to the sequence of SEQ ID NO:2,

c) a biologically-active fragment of at least 10 amino acid residues of the amino acid sequence of SEQ ID NO:2, and

d) an immunogenic fragment of at least 10 amino acid residues of the amino acid sequence of SEQ ID NO:2.

2. A pharmaceutical composition comprising the antibody of claim 1 in conjunction with a suitable pharmaceutical carrier.

3. A method of preparing a polyclonal antibody with the specificity of the antibody of claim 1 comprising:

a) immunizing an animal with the polypeptide of SEQ ID NO:2 or an immunogenic fragment of at least 10 amino acid residues thereof under conditions to elicit an antibody response;

b) isolating animal antibodies; and

c) screening the isolated antibodies with the polypeptide thereby identifying a polyclonal antibody binds specifically to the polypeptide of SEQ ID NO:2.

4. An antibody produced by a method of claim 3.

5. A pharmaceutical composition comprising the antibody of claim 4 in conjunction with a suitable pharmaceutical carrier.

6. A method of making a monoclonal antibody with the specificity of the antibody of claim 1 comprising:

a) immunizing an animal with the polypeptide of SEQ ID NO:2 or an immunogenic fragment of at least 10 amino acid residues thereof under conditions to elicit an antibody response;

b) isolating antibody producing cells from the animal;

c) fusing the antibody producing cells with immortalized cells in culture to form monoclonal antibody-producing hybridoma cells;

d) culturing the hybridoma cells; and

e) isolating from the culture monoclonal antibodies which binds specifically to the polypeptide of SEQ ID NO:2.

7. A monoclonal antibody produced by a method of claim 6.

8. A pharmaceutical composition comprising the antibody of claim 7 in conjunction with a suitable pharmaceutical carrier.

9. The antibody of claim 1, wherein the antibody is:

(a) a chimeric antibody;

(b) a single chain antibody;

(c) a Fab fragment; or

(d) a $F(ab')_2$ fragment.

10. The antibody of claim 1, wherein the antibody is produced by screening a Fab expression library.

11. The antibody of claim 1, wherein the antibody is produced by screening a recombinant immunoglobulin library.

12. A diagnostic test for a condition or disease associated with the expression of human stem cell antigen-2 (SCAH-2) in a biological sample, the method comprising:

a) combining the biological sample with an antibody of claim 1, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex, and

b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.

13. A diagnostic test of claim 12, wherein said antibody is labeled with a detectable label.

14. An antibody of claim 1, labeled with a detectable label.

15. A method of diagnosing a condition or disease associated with the expression of human stem cell antigen-2 (SCAH-2) in a subject, comprising administering to said subject an effective amount of the composition of claim 14.

16. A method of detecting a polypeptide having an amino acid sequence of SEQ ID NO:2 in a sample, the method comprising:

a) incubating the antibody of claim 1 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and

b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide having an amino acid sequence of SEQ ID NO:2 in the sample.

17. A method of purifying a polypeptide having an amino acid sequence of SEQ ID NO:2 from a sample, the method comprising:

a) incubating the antibody of claim 1 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and

b) separating the antibody from the sample and obtaining the purified polypeptide having an amino acid sequence of SEQ ID NO:2.

18. A method of treating cancer, comprising administering to a patient in need of such treatment an effective amount of an antibody of claim 1.

19. A method of claim 18, wherein the cancer is prostate cancer.

20. A method of claim 18, wherein the antibody is a monoclonal antibody.